

Calvert Cliffs 1

1Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Comply with TS for SRW and AFW with Watertight Doors Open

The Inspectors identified a non-cited violation (NCV) for the Service Water (SRW) and Auxiliary Feedwater (AFW) systems being inoperable without completing the actions required by Technical Specifications. Constellation did not declare AFW and SRW trains inoperable when water tight doors providing a High Energy Line Break (HELB) carrier were opened for maintenance or testing. Station personnel wrote condition report (CR) IRE-016-870 to address the control of these HELB barriers and have provided guidance to declare the trains inoperable if the water tight doors are open.

This finding is more than minor because it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component availability during design basis events, specifically HELBs. The SDP phase 1 review determined a phase 1 evaluation was required since both SRW and AFW subsystems could have been impacted with the HELB barrier removed. The phase 2 evaluation yielded a very low safety significance (Green) because of the low exposure time when the watertight doors were open. A contributing cause of the finding is related to the cross cutting aspect in the area of problem identification and resolution (PI&R) because Constellation did not implement and institutionalize operating experience (OE) related to control of the HELB barriers through changes to station processes or procedures. (Section 1R15)

Inspection Report# : [2006004](#) (*pdf*)

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Comply with TS 5.4.1 for Salt Water Strainers

The inspectors identified a NCV of TS 5.4.1.a because Constellation did not initiate a condition report (CR) to document the adverse performance of the service water (SRW) heat exchanger salt water (SW) strainers during high debris loading as required in the Service Water Heat Exchanger Alarm Manual. Constellation also did not assess the operability of the strainers as required by the Corrective Action Program. Station personnel initiated CR IRE-017-018 to address the issue and assess operability of the strainers.

The finding was more than minor since it had a credible impact on the objective for the mitigating system cornerstone and the attribute of component reliability during design basis events where the SRW system was required. This finding was determined to be a finding of very low safety significance (green) because only one subsystem of the SRW system was inoperable at any time and the subsystem inoperability time was less than the maximum allowed by TS. A contributing cause of this finding was related to the cross-cutting aspect of PI&R because Constellation did not implement the corrective action program with a low threshold for identifying the problems with the SRW heat exchanger SW strainers. (Section 4OA2)

Inspection Report# : [2006004](#) (*pdf*)

Significance:  Jun 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to establish reference values or reconfirm previous values following maintenance that affected reference values of the AFW and ECCS pumps

The inspectors identified a non-cited violation of 10 CFR 50.55a, Codes and Standards, because the licensee did not establish new reference values or reconfirm the previous reference values following maintenance that affected hydraulic or mechanical parameters on the auxiliary feedwater (AFW) and emergency core cooling system (ECCS) pumps as required by the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code for inservice testing. The licensee entered this issue into their corrective action program as IRE-014-764. The planned corrective action include a review of maintenance and IST data to determine whether new reference values are needed or reconfirm existing reference values for the AFW and ECCS pumps.

This finding is more than minor because the same issue affected a number of safety-related pumps tested and the issue was repetitive. The finding has a very low safety significance because the condition did not result in an actual failure of the AFW and ECCS pumps, or result in systems being declared inoperable for greater than their allowed technical specification outage time. A contributing cause of the finding is related to the cross-cutting aspect in the area of problem identification and resolution because the licensee did not periodically trend and assess information to identify programmatic and common cause problems.

Inspection Report# : [2006003](#) (*pdf*)

Significance: **W** Mar 24, 2006

Identified By: Self-Revealing

Item Type: VIO Violation

Failure to Adequately Control the Design of the Setpoints for "1A" EDG Feeder Breaker for Essential EDG Support Systems

A violation of 10 CFR 50, Appendix B, Criterion III (Design Control) was identified involving the failure to ensure an adequate trip setpoint for the electrical circuit breaker that supplies the "1A" EDG support systems. An SDP Phase 3 risk analysis determined that the failure to account for possible combinations of "1A" EDG support equipment operation in the short-time over-current trip setpoint for the supply breaker to 1MCC123 was preliminarily of low to moderate safety significance. Specifically, the short-time over-current trip setpoint was set too low and it did not account for the in-rush current associated with the possible combinations of equipment that could start and operate to support the "1A" EDG following a loss of offsite power (LOOP). This low setpoint, combined with normal setpoint drift, resulted in substantial periods where the "1A" EDG would not have been able to perform its safety function, because the support system supply circuit breaker would have tripped open inappropriately. Calvert Cliffs took immediate action to correct the breaker setpoint and evaluate other potential deficiencies of a similar nature. This issue was entered into the corrective action program at Calvert Cliffs for resolution.

The finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure the availability and reliability of systems (i.e., emergency AC power) that respond to initiating events to prevent undesirable consequences, and its related attribute for design control. The "0C" Station Blackout Diesel Generator (a non-safety related, but risk-important power source) and the breaker for its support systems were similarly affected by the performance deficiency. SDP Phase 1, Phase 2, and Phase 3 assessments were used to evaluate the risk significance of this finding. The Phase 1 screening required performance of a Phase 2 evaluation because the finding represented a loss of safety function of a single train, for greater than its allowed outage time. The Technical Specification (TS) allowed outage time is 14 days for a single EDG. To assess the full significance both the Phase 2 and Phase 3 analyzes assumed a 5407 hour exposure for the "1A" EDG being unable to perform its safety function and an additional 6.7 hours where both the "1A" EDG and the "0C" DG would not have been able to perform their required functions (the "0C" EDG had less instrument drift). The Region I senior reactor analyst (SRA) conducted a Phase 3 Risk Assessment, to refine the Phase 2 analysis and to incorporate external events and recovery credit. The Phase 3 analysis for internal and external initiating events, using the above assumptions and licensee risk information, determined a ?CDF of approximately 1 in 150,000 years of operation (mid E-6 per year range) for both internal and external events, with no associated increase in large early release frequency (LERF). The risk of the "1A" EDG exposure time dominated the analysis by several orders of magnitude over the risk of the concurrent "1A" EDG and "0C" DG exposure time. A large fire in the turbine building, which causes a loss of offsite power, was the dominating initiating event.

Inspection Report# : [2006012](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

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